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ive. The most notable of the few gardens in our own country is that at Cambridge, and it would be a pertinent inquiry as to what share of credit the garden is entitled in the ascendancy of Harvard University, especially as a school of science. But the Cambridge garden has never attempted to advance economic interests or to furnish diversion for visitors; its finances have not permitted such expansion. For some time past the subject of a botanic garden for New York city has been agitated, and with encouraging results. Several of the New York dailies, with medical, gardening and other journals, have advocated it. The movement is, as it should be, under the direction of the Torrey Botanical Club. Besides creating a strong public opinion in its favor, the club has secured the passage of a resolution by the commissioners of public parks for setting aside a suitable piece of ground in one of the new parks, provided a proper endowment fund be obtained within two years. The club considers one million dollars the minimum amount required. To those who know something of the cost of foreign gardens of this sort, the sum will seem small enough. The new garden at Strassburg cost \$225,000, and it comes far from being adequate to the needs of a great city like New York. The success of this movement means not only a valuable acquisition for the city and the people who have the opportunity of visiting it, but a great boon to American botanical science. The Torrey Club is entitled to all the support in this great undertaking her fellow botanists can render.

CURRENT LITERATURE.

Peach Yellows.

The large handbooks of plant diseases by the German authors, Frank and Sorauer, present a remarkable array of maladies in the vegetable kingdom, far exceeding the number most persons would suppose possible. But, of the numerous diseases so far recognized, only a very small part has received adequate study, and the number for which acceptable remedies or preventives can be confidently prescribed is astonishingly small. The German works referred to are the only comprehensive treatises of the kind yet published, and still they do not include some of the most prominent and destructive diseases which trouble the American cultivator.

The increasing attention given to the subject in this country, by the cultivator on the one hand, in recognizing the value of the work already done, and by the investigator on the other hand, in more thorough study, particularly of the distinctively American maladies, present a hopeful outlook for this branch of applied science.

Of the strictly American plant diseases probably none has had more prominence, proved so unmanageable and has so effectively baffled all at-

tempts to determine its cause and obtain suitable remedies or even to accurately diagnose, as that of peach yellows. The unusual difficulties which the study of this disease presents, lend much interest to all well directed efforts toward elucidating the subject. The most important paper in this line yet published is that of Mr. Erwin F. Smith,¹ recently issued as Bulletin No. 9 of the Section of Vegetable Pathology of the Department of Agriculture. The practical fruit-grower will doubtless feel disappointed when he looks through this rather thick report, as he will be unable to find answers to the two great questions: "What is the cause?" and "What is the remedy?" But if Mr. Smith has not found the key that unlocks the entrance to the field, he has certainly defined the limits of the field, given a large amount of information regarding the lay of the land, and carefully traced its history, in short has made a comprehensive and lucid statement of the whole subject as it stands at the present time, backed up by a long array of authority.

The report covers the work of sixteen months, far too short a time to institute and conclude much experimental evidence. The results of this part of the inquiry will doubtless appear in a later report. But besides properly assorting the incongruous views of others, Mr. Smith has added valuable knowledge from his own observations, particularly regarding the diagnosis of the disease and its distribution.

There is record of peach yellows occurring near Philadelphia as early as 1791, and it is known that peaches had been in cultivation in this country for more than one hundred and fifty years prior to that time. At first the disease was local, but rapidly became general in the northern Atlantic states and spread westward and northwestward. At present it is scarcely known in the Gulf states or west of the Mississippi, and not at all on the Pacific coast. The author gives an idea of the large amount of capital invested in the peach industry, and the heavy losses which have resulted in many districts from the yellows. The disease is found to be contagious, at least it can be communicated to healthy trees by budding from diseased trees. The author speaks very cautiously respecting the cause, suggesting micro-organisms as highly probable, although he considers that root-aphides and root-fungi have some claims. Much attention is given to the theory of soil exhaustion, so ably advocated by Dr. Goessmann and Prof. Penhallow, but the author finds it faulty and inconclusive.

The illustrations of the report are well selected and well executed, especially the colored ones.

Altogether, both the author and the public are to be congratulated upon the excellence and completeness of this presentation of an economically important and difficult subject. The questions of cause and remedy are yet to be answered, but with the evidence of good work before us,

¹SMITH, ERWIN F.—Peach Yellows: a preliminary report. 8vo., 212 pp, 9 colored maps, 37 partly colored plates. Washington 1888.

there can be no doubt that if suitable facilities are afforded, the author will make, in due time, an equally valuable contribution to this phase of the subject.

Minor Notices.

IT IS a great gain to botanical science when botanico-chemical questions are treated by an investigator trained in both botanical and chemical methods. Such foundation for work has enabled Dr. W. E. Stone, now of the experiment station of Tennessee, to carry out an interesting and important study of arabinose.² This substance is found in gum arabic, but that used was from the gum that exudes from cherry trees. It was found, contrary to the views of other investigators, to belong to a series distinct from that of the true sugars, and unlike them to give a reaction for furfural when heated with sulphuric acid. The work involved the employment of a method for the pure culture of yeast, and a study of the conditions of a successful fermentation, already referred to in this journal.

AN INTERESTING PAPER on the paleontological history of the genus *Platanus*, by Prof. L. F. Ward, has recently been distributed as an excerpt from the Proceedings of the U. S. National Museum.³ It shows that this small genus of only seven existing species was at its zenith in the Cretaceous and Tertiary periods. A prominent characteristic of the archaic forms is the basal lobes of the leaves, now only occasionally met with on young shoots. By means of these lobes and the venation of the leaves the genetic relationship is pointed out between several fossil forms referred to different genera and their living representatives.

M. P. MAURY has prepared an enumeration⁴ of the Cyperaceæ collected in Ecuador and New Grenada by André. Previous reports upon other orders have called attention to the richness of the collection of M. André. The present list comprises 58 species, of which two of *Cyperus*, one of *Dichromena*, and one of *Rhynchospora* are new. The paucity of *Carices* is quite remarkable. The reprint is re-paged, a most reprehensible practice, as it seems to us, and one for which there is not the slightest excuse.

² STONE, WINTHROP E.—Investigations concerning arabinose and some related substances. 26 pp., 8vo. Knoxville, 1889.

³ L. c., 1888, p. 39, plates xvii-xxii; also abstract in Proc. Am. Assoc. Adv. Sci., vol. xxxvii, p. 201.

⁴ MAURY, P.—Les Cypéracées de l'Ecuador et de la Nouvelle-Grenade de la collection de M. Ed. André. Reprint from *Journal de Botanique* for Nov. 16 and Dec. 1, 1888. Imp. 8vo., pp. 14. Paris: J. Mersch. 1889.